ABSTRACT OF THE DISCLOSURE

A decomposition technique, for solving combinational constraint expressions, is presented.

Decomposing a set of constraints can increase the opportunities for dividing

5　them into independent sets that do not need to be conjoined in a constraint-solving process using a BDD representation.

An AND decomposition, relying on a Theorem 1, is presented.　An OR decomposition, relying on a corollary of Theorem 1, is presented.

Theorem 1 provides an operation to test for, and create, a pair of sub-constraints

10　G and H which are independent in any two variables x_0 and x_1.

A decomposition procedure is presented for separating as many variables as possible, of an input constraint, into disjoint sub-constraints.

A merging procedure is presented, that can be used if a decomposition does not only contain constraints whose support sets are disjoint from each other.

15　The decomposition procedure can also be used to identify hold constraints.